OIPE JC62 JUN 09 2003 PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

ROB A. BEUKER

SERIAL NO.: 09/624,522

FILED: July 24, 2000

MOTION ESTIMATON

Atty. Docket

PHN 17,569

GROUP ART UNIT: 2613

EXAMINER: T.T. Vo

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RECEIVED
JUN 10 2003
Technology Center 2600

Sir:

RESPONSE

This is in response to the Office Action mailed March 7, 2003, in which the Examiner rejected claims 1 and 4-7 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,473,379 to Horne; claims 2 and 3 under 35 U.S.C. 103(a) as being unpatentable over Horne in view of U.S. Patent 6,462,791 to Zhu; and claim 8 under 35 U.S.C. 103(a) as being unpatentable over Horne in view of U.S. Patent 6,385,245 to De Haan et al.

Applicant traverses the above rejections and offers the following explanation.

The Horne patent discloses a method and apparatus for improving motion compensation in digital video coding, in which the global motion vector is used to define a search window for the motion estimator. Within this search window as defined by the

global motion vector, motion vectors are sought by means of some motion vector estimation process.

In the subject invention, as claimed in claim 1, the global motion vector is used as a candidate vector in a block-based motion vector estimation process (BME) that involves comparing a plurality of candidate vectors (including the global motion vector) to determine a motion vector.

Moreover, while the motion vector estimation techniques that select an output vector from candidate vectors are known in the art (see, for example, the De Haan et al. patent cited by the Examiner), there is nothing in the art that would provide an incentive to a person of ordinary skill in the art to replace using the global motion vector to define the search window as taught by Horne, by using the global motion vector as a candidate vector as taught by the present invention.

With regard to claim 4, Horne indeed shows using the most frequently occurring vector to obtain the global vector. However, in Horne, contrary to the statements of the Examiner, there is no mention in Horne whatsoever of using a second most frequently occurring vector to obtain the global vector.

With regard to claim 5, Horne indeed shows using the most frequently occurring vector to obtain the global vector. However, nothing in Horne shows that the process of determining a global vector comprises the steps: on a block basis, comparing a plurality

of candidate vectors including the most frequently occurring vector to obtain a best vector per block; and then outputting as the global vector, the most frequently occurring best vector.

The Zhu patent discloses constrained motion estimation and compensation for packet loss resiliency in standard based CODEC which arguably discloses making a selection among block-based motion vectors having a corresponding motion error below a given motion error threshold. However, Applicant submits that Zhu fails to disclose or suggest that which is missing from Horne, i.e., the global motion vector is used as a candidate vector in a block-based motion vector estimation process (BME) that involves comparing a plurality of candidate vectors (including the global motion vector) to determine a motion vector.

The De Haan et al. patent discloses motion estimation and motion-compensated interpolation which discloses applying the output video from a motion compensation arrangement to a display unit. However, Applicant submits that De Haan et al. fails to disclose or suggest that which is missing from Horne, i.e., the global motion vector is used as a candidate vector in a block-based motion vector estimation process (BME) that involves comparing a plurality of candidate vectors (including the global motion vector) to determine a motion vector.

In view of the above, Applicant believes that the subject invention, as claimed, is neither anticipated nor rendered obvious

by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicant believes that this application, containing claims 1-8, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

by _____
Edward W. Goodman, Reg. 28,613
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Tel.: 914-333-9611

CERTIFICATE OF MAILING

It is hereby certified that this correspondence is being deposited with the United States Postal Service as First-class mail in an envelope addressed to:

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On June 5, 2003

By Brunett James

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of | Atty. Docket

ROB A. BEUKER | PHN 17,569

Serial No.: 09/624,522 | Group Art Unit: 2613

Filed: July 24, 2000 | Examiner: T.T. Vo

Title: MOTION ESTIMATION

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Sir:

Enclosed is an amendment in the above-identified application.

[X] No additional fee is required.

[ ] The fee has been calculated as shown below.

CLAIMS AS AMENDED			
	Claims remaining after amendment / Highest number previously paid for	Number extra / Rate	Additional Fee
Total Claims	8 Minus 20 [1] =	X $18 =	$
Independent Claims	2 Minus 3 [2] =	X $84 =	$
Multiple Dependent Claims, if any. If not previously paid, $280.			$
Total Additional fee for this amendment =			$

[1] If less than 20, enter 20. [2] If less than 3, enter 3.

Please charge any fees which may be required, except the issue fee, or credit any overpayment to Deposit Account No. 14-1270.

Edward W. Goodman, Reg. 28,613
914-333-9611

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on June 5, 2003

Burnett James